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ARIZONA STATE UNIVERSITY ■ COLLEGE OF BUSINESS
CENTER FOR BUSINESS RESEARCH

Arizona Budget Deficit

Study Reveals Many Reasons, Few Solutions

Arizona's state government faces a projected budget deficit of approximately $300 million in fiscal 1988-89, following remedies for a $50 million 1987-88 shortage. Throughout the 1980s, mid-year corrections (largely across-the-board spending reductions) frequently have been necessary to produce a legally mandated balanced budget.

This article examines Arizona governmental revenues and expenditures, particularly in comparison to those of other states. The analysis is based primarily on data for the 1985-86 fiscal year, the latest available from the U.S. Department of Commerce. Revenues are examined over time as well, to determine the cyclicality of various sources.

Though the primary emphasis is state government monies, combined state and local government revenues and expenditures are analyzed as well. In some states, certain taxing and spending authority is at a local government, rather than state government, level. Throughout this article, per-capita figures are used to compare Arizona revenues or expenditures to national averages.

KEY FINDINGS

Arizona revenues in 1985-86 were well below the national average on a per-capita basis, whether measured at the state or combined government level. If per-person collections had matched the national average, additional hundreds of millions of dollars would have been available.

Tax collections, however, were quite near the national per-capita average. Federal intergovernmental revenues fell hundreds of millions of dollars short of the level usually received by a state of Arizona's size, accounting for most of its comparative revenue shortage.

State government expenditures per person were much lower than the national average. Combined state and local government spending, however, was about average.

Both sources and uses of government funds are much different in Arizona from the national norm. The state is highly dependent for revenue on the cyclical general sales tax, the motor vehicle license tax and the motor fuel sales tax. Compared to the average state on a per-capita basis, Arizona receives little from the income tax or from federal funds.

Spending by Arizona state government is strongly skewed toward public safety and transportation. Relatively little is spent on social services.

STATE GOVERNMENT REVENUES

Intergovernmental revenues – mostly from the federal government – provided approximately $800 million in 1985-86, 17.5 percent of state government's total revenues. Tax collections totaled $3.195 billion, 69 percent of the total; current charges – amounts received from

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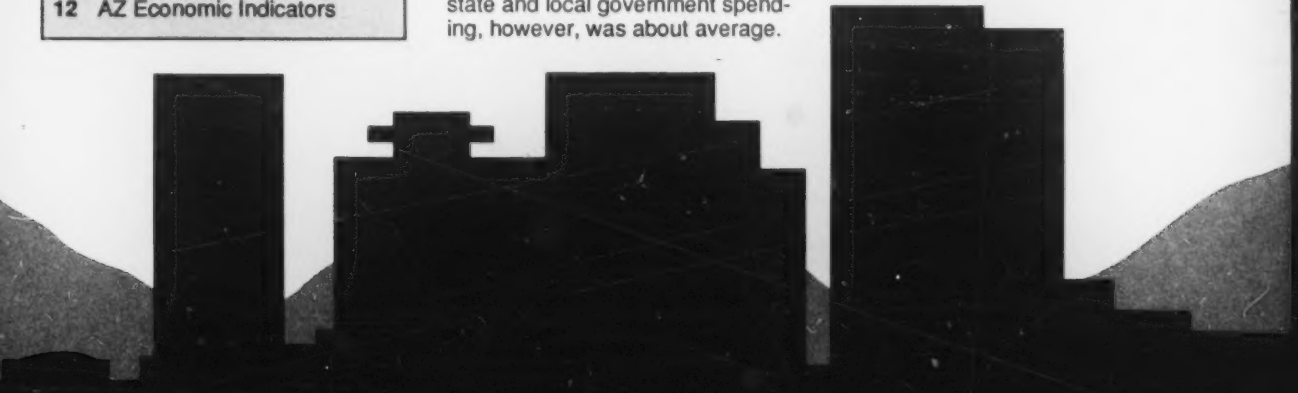

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the public for performance of specific services benefiting the person charged – and miscellaneous sources accounted for the rest (see Table 1).

In comparing the state to the rest of the nation, the most striking differential occurred in federal intergovernmental revenues. Arizona's per-capita amount ranked last among the 50 states, at only 57 percent of the national average. If Arizona received as much in federal monies per person as the national average, the state would have taken in an additional $550 million in 1985-86 revenues.

Reasons for this large differential include Arizona's decision not to participate in Medicaid and the policy of spending very little on social services such as health and public welfare, for which federal matching funds are available. Approximately 80 percent of the differential in federal funds occurred in the public welfare category, which includes Medicaid and other programs for which the state spends relatively little.

Mostly because of this very low federal funding, per-capita state revenues were far below the national average, ranking 38th. Taxes formed a disproportionately large source of funds, though tax collections per person were barely more than the national average. Though near average overall, Arizona ranks either very high or very low in collections from specific taxes, similar to its extremes in many sources and uses of funds.

In particular, the state relies substantially on the general sales tax, for which it collected 41 percent more per person than the national average in 1985-86, ranking fifth among all states. Other heavily used taxes include the motor fuel sales tax, for which Arizona ranked 13th, and the motor vehicle license tax.

Underutilized taxes, compared to the national average, include "other" selective sales taxes – a real estate sales tax, for example. The general license tax on corporations was just 9 percent of the national norm; about $40 million could be raised from this source before per-capita collections would exceed the national average. Small amounts could be drawn from a variety of other sources, such as raising the selective sales tax on tobacco and increasing fees on document transfers.

TABLE 1
ARIZONA STATE GOVERNMENT REVENUES, 1985-86

	Revenue (in Millions)	Per-Capita Revenue	Ratio of U.S. Per-Capita	Average Revenue (in Millions*)	Actual Less Average (in Millions)
TOTAL	$4,605	$1,388	85%	$5,428	–$823
Total Intergovernmental	807	243	59	1,360	–553
Federal	733	221	57	1,278	–545
Education	239	72	105	228	11
Public Welfare	132	40	23	577	–445
Health and Hospitals	35	11	71	49	–14
Highways	205	62	107	191	14
Other	122	36	52	233	–111
Local	74	22	90	81	–7
Total Taxes	3,196	963	102	3,146	50
General Sales Tax	1,459	440	141	1,032	427
Selective Sales Tax	510	154	99	518	–7
Motor Fuel	257	78	132	194	63
Other	253	76	78	323	–70
Income Tax	873	263	74	1,184	–311
Individual	702	212	75	931	–229
Corporate	171	51	67	253	–82
License Tax	226	68	110	206	20
Motor Vehicle	168	51	159	106	62
Other	58	17	58	100	–42
Other Taxes	127	38	62	207	–80
Property	115	35	191	60	55
Other	12	4	8	147	–145
Current Charges	328	99	79	414	–86
Miscellaneous	275	83	54	508	–233
Interest Earned	103	31	42	245	–142
Other	172	52	65	264	–92

*Total revenue if per-capita revenue equaled the national average

Source: Center for Business Research, College of Business, Arizona State University, from data in *State Government Finances in 1986*, U.S. Department of Commerce.

The most important source of possible additional revenues is the income tax. An additional $300 million from individuals and corporations could have been collected in 1985-86 before Arizona's per-person collections would have reached the national average. On a per-capita basis, the state ranked 33rd.

Current charges and miscellaneous revenues were well below the national average. Of the $320-million differential derived by multiplying the per-capita difference from the national average by the number of Arizona residents, $140 million resulted from interest earned and $75 million from royalties and rents. The overall, below-average comparison is misleading, however, because local government sources must be taken into account.

COMBINED STATE AND LOCAL REVENUES

Looking at revenues on a combined state and local basis had little impact on the analysis of most revenue sources. Combined revenues were approximately $570 million short of the national average, $525 million of which were in the category of federal intergovernmental revenues.

Total tax collections per-capita were near the national average after adjusting for payments in lieu of taxes. (For example, the Salt River Project makes a voluntary contribution in lieu of property tax, which is classified as a miscellaneous revenue source rather than a tax source). The only significant differences occurred in property taxes, which on a combined basis were 9 percent below the national per-capita average.

The major difference in the revenue picture between the state government and the combined state and local governments appeared in the current charges and miscellaneous category. While state collections were well below the national average, combined government collections were near the national norm.

STATE REVENUES OVER TIME

A major issue in Arizona's budget-balancing is the cyclicality of its revenues. The business cycle,

TABLE 2
REAL PER-CAPITA ARIZONA TAX REVENUES
Annual Percent Change

	1986	*1985*	*1984*	*1983*	*1982*	*1981*
TOTAL	3%	7%	12%	%	–4%	–7%
General Sales Tax	2	9	23	2	–8	–13
Selective Sales Tax	8	16	9	23	–15	–6
Individual Income Tax	9	6	0	5	12	12
Corporate Income Tax	–20	–6	12	35	–16	–5
License Tax	9	12	5	9	17	–2
Property Tax	–4	–19	–4	–10	–3	–10

Source: Center for Business Research, College of Business, Arizona State University, from data in *State Government Finances* (annual reports from 1980 through 1986), U.S. Department of Commerce.

TABLE 3
ARIZONA STATE GOVERNMENT EXPENDITURES, 1985–86

	Expenditures (in Millions)	*Per-Capita Expenditures*	*Ratio of U.S. Per-Capita*	*Average Expenditures (in Millions*)*	*Actual Less Average (in Millions)*
TOTAL	$4,688	$1,413	90%	$5,194	–$506
Education	2,076	625	107	1,941	135
Social Services	689	208	47	1,455	–766
Public Welfare	480	145	48	1,001	–521
Hospitals	61	18	26	237	–176
Health	131	40	73	179	–48
Other	16	5	42	39	–23
Transportation	743	224	136	548	195
Highways	739	223	146	506	233
Other	4	1	9	42	–38
Public Safety	332	100	140	238	94
Police	71	21	139	51	20
Corrections	225	68	151	149	76
Other	36	11	95	38	–2
Environment and Housing	71	24	48	168	–97
Natural Resources	65	20	65	101	–36
Other	6	5	23	67	–61
Government Administration	158	48	91	174	–16
Financial Administration	103	31	128	81	22
Other	55	17	59	93	–38
Interest on General Debt	50	15	21	233	–183
Local Government Support	425	128	230	185	240
Other	135	41	75	250	–115

*Total expenditures if per-capita expenditures equaled the national average

Source: Center for Business Research, College of Business, Arizona State University, from data in *State Government Finances in 1986*, U.S. Department of Commerce.

which alternates booms and recessions over a roughly five-year period, greatly affects revenues. In particular, the general sales tax is highly cyclical, as seen in Table 2. (The large increase in 1984 is partially explained by the rise in the tax rate.) Selective sales taxes (the large 1983 gain is in part explained by an increase in the rate) and corporate income tax collections also are cyclical.

Most stable are the license taxes, of which the motor vehicle tax accounts for approximately three-fourths. Individual income taxes also have been relatively stable.

Arizona's tax revenues became more cyclical in the early 1980s. First, the less cyclical sales tax on food was removed in 1980. Then, the general sales tax rate was raised. This increase was necessary because revenue from the food sales tax never was replaced and because federal intergovernmental revenues shrank between 1980 and 1983. The federal reductions were severe on an inflation-adjusted, per-capita basis.

After increasing less during the early 1980s, Arizona's total revenues grew more rapidly than the national average, as expected from the state's rapid growth. Between 1983 and 1986, federal intergovernmental revenues kept pace with other receipts.

STATE GOVERNMENT EXPENDITURES

State government's per-capita expenditures were only 90 percent of the national average in 1985-86, ranking 34th. Some $500 million less was spent than if spending per-capita had equaled the national average. Further, uses of state funds varied widely from the national average (see Table 3).

In particular, Arizona state government spends little on social services. In 1985-86, spending in the public welfare category alone was more than $500 million less than if per-capita spending had equaled the national average. Arizona ranked 46th in per-capita expenditures. Major components of this category include Medicaid (the AHCCCS program in Arizona) and AFDC (Aid to Families with Dependent Children). In other social service categories, Arizona's spending ranked 50th on hospitals and 40th on health care.

In contrast, the state spent considerably more on transportation and public safety than the national average. Highway spending per-capita ranked 11th, 46 percent higher than the national average. Expenditures for police protection placed ninth and spending on corrections ranked sixth.

Despite reports to the contrary, educational spending per-capita was 7 percent higher than the national average, ranking 19th. Education accounted for 44 percent of all expenditures in 1985-86, compared to 37 percent nationally.

One other area of much higher state expenditures is "local government support," in which funds raised at the state level are spent by local governments. Thus, combined government expenditures also need to be examined.

COMBINED STATE AND LOCAL EXPENDITURES

While total expenditures by state government were 10 percent less than the national per-capita average, combined government spending was approximately 1 percent higher than the national norm in 1985-86. The basic picture described in the previous section remains accurate, however. Arizona state and local governments spend heavily on public safety and transportation but sparingly on social services.

In addition to highways, police protection and corrections, combined Arizona government spending was above average on environmental categories such as natural resources and sewerage and on government administration. Further, per-capita educational spending was 13 percent above average in 1985-86. Multiplying the per-capita difference in education expenditures by the Arizona population results in $360 million of spending beyond the national average.

CONCLUSION

Since 1985-86, when a mid-year correction was not necessary to balance the budget, state government expenditures have increased more than revenues, putting the state budget increasingly out of balance. Reasons for the growing gap include below-expected revenues from the general sales tax and corporate income tax and above-predicted expenditures for the indigent health care program.

The persistent and currently acute budget problems facing the state government result, in part, from the tendency to structure revenues and expenditures to match conditions during boom phases of the economic cycle. This makes the entire process highly dependent on growth. Boom conditions cannot last more than a couple years, however, and an economic downturn is inevitable every few years. The result is constantly high expenditures but varying revenues.

Therefore, a short-term solution to the current large deficit is very difficult. Though substantial monies could be raised by instituting or increasing certain taxes, the total tax burden then would be above the national average. Increases in the individual and corporate income tax rates would raise the most money, but a real estate sales tax and a variety of specialized taxes also hold promise. In addition, user fees and a tax on services have important advantages for reducing cyclicality and regressivity.

Cutting expenditures is another alternative, but state services – measured by overall per-capita spending – already are subpar in comparison to the national average. Further, those programs on which the state spends the most – both in actual terms and in comparison to other states – are education and highways, two areas in which Arizona citizens seem to desire more, rather than less, spending. That leaves corrections as the only program in which a substantial reduction might be made.

In essence, the state now must pay for prior decisions not to build infrastructure, such as highways, and not to participate in Medicaid or spend much on social services, for which substantial federal funds are available.

In the longer term, a complete re-evaluation of the state's sources and uses of funds may be desirable. In particular, a tax system less dependent on growth is necessary. A broad review should incorporate a study of the efficiency of government expenditures. In the short term, balancing next year's budget will require some form of "revenue enhancement."

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Metropolitan Phoenix Dominates Arizona's Population Growth

Two-thirds of Arizona's population growth between 1980 and 1987 occurred in Maricopa County. The comparable share during the 1970s was 57 percent; growth throughout the rest of the state was unusually fast during the early 1970s. Weak economies in most other areas of Arizona, coupled with an unprecedented building boom in metropolitan Phoenix, largely explain the Phoenix area's greater share of population growth in the 1980s.

Pima County's 15-percent share of state growth was down slightly from 19 percent during the 1970s. The county's estimated population was revised down from last year's estimate (see January 1987 *Arizona Business*). The appeal to the 1985 special census never was resolved; current estimates assume an undercount but not as substantial as previously supposed.

Two rural counties – Mohave and Yavapai – grew faster than Maricopa County in terms of percent change (see Table 1). Most of the other counties experienced substantially less growth. Though conditions have improved in rural Arizona since 1985, many problems remain.

This article focuses on population projections, but a detailed look at the historical record is first provided because of its relevance in making the projections.

HISTORICAL POPULATION GROWTH

Population growth is a function of three components. In Arizona, net natural increase (the excess of births over deaths) accounts for roughly one-third of total population change. Non-employment migration (mostly retirement) constitutes approximately one-seventh, while employment migration makes up about one-half.

Net employment migration to Arizona varies widely with the economic cycle. The Arizona economy follows the national economy closely in this regard, slumping every four to five years, on average. Largely because of fluctuations in job availability, net in-migration is more than twice as great during economic booms than during recessions.

In addition to this short-term cycle, growth in Arizona has followed a longer periodicity, corresponding to national demographic changes. The single most important factor underlying this long-term cycle is the age distribution of the American population, which varies as a result of fluctuating birth rates. Since the propensity to move is much higher among young people, the greater the number of young adults nationwide, the greater the net migration to Arizona.

Population growth in Arizona, therefore, was greater during the 1950s than during the 1960s (see Table 2) because of earlier fluctuations in national birth rates. During the depression years of the 1930s and the war years of the early 1940s, the number of births declined nationally. The pool of potential mi-

grants to Arizona (and other southern and western states) was less during the 1960s, resulting in much reduced flows (a decline of more than one-third in net in-migration).

By 1970, the pool of potential migrants was expanding rapidly because of the baby boom that began in 1946. Thus, net in-migration during the 1970s and 1980s was sharply higher than in previous years. The baby boom ended in 1964; the number of births dropped more than one-fourth between the late 1950s-early 1960s peak and the mid-1970s trough (the baby-bust generation). Thus, Arizona is entering a period of almost no gain in population inflows, which will last into the next century.

TABLE 1
1987 POPULATION ESTIMATES AT JULY 1
(In Thousands)

	1987	Change 1980-87	Percent Change 1980-87
Apache	58.0	5.9	11.3
Cochise	98.0	12.3	14.4
Coconino	90.0	15.0	20.0
Gila	40.0	2.9	7.8
Graham	24.5	1.6	7.0
Greenlee	9.0	–2.4	–21.1
La Paz	14.0	1.4	11.1
Maricopa	1,970.0	460.8	30.5
Mohave	80.0	24.1	43.1
Navajo	74.0	6.4	9.5
Pima	635.0	103.6	19.5
Pinal	105.0	14.1	15.5
Santa Cruz	25.0	4.5	22.0
Yavapai	92.0	23.9	35.1
Yuma	90.0	13.8	18.1
Non-urban	799.5	123.5	18.3
Arizona	3,404.5	687.9	25.3

Source: Center for Business Research, College of Business, Arizona State University. The 1987 estimates are based largely on work by the Arizona Department of Economic Security, Population Statistics Unit – David Lillie, in particular – but are not the state's official population estimates.

TABLE 2
DECENNIAL CENSUS POPULATION, 1900-1980

	Number				Change in Number			
	Arizona	*Maricopa*	*Pima*	*Non-urban*	*Arizona*	*Maricopa*	*Pima*	*Non-urban*
1900	122,931	20,457	14,689	87,785				
1910	204,354	34,488	22,818	147,048	81,423	14,031	8,129	59,263
1920	334,162	89,576	34,680	209,906	129,808	55,088	11,862	62,858
1930	435,573	150,970	55,676	228,927	101,411	61,394	20,996	19,021
1940	499,261	186,193	72,838	240,230	63,688	35,223	17,162	11,303
1950	749,587	331,770	141,216	276,601	250,326	145,577	68,378	36,371
1960	1,302,161	663,510	265,660	372,991	552,574	331,740	124,444	96,390
1970	1,775,399	971,228	351,667	452,504	473,238	307,718	86,007	79,513
1980	2,716,633	1,509,262	531,443	675,928	941,234	538,034	179,776	223,424

Source: U.S. Bureau of the Census (1900-1980).

Maricopa County
(Metropolitan Phoenix)

Growth in the Phoenix area has been the fastest in the state since World War II. More than the Tucson area or rural Arizona, the Phoenix area's growth has come from net in-migration. In recent years, metro Phoenix has attracted more than 70 percent of the state's net in-migration.

Net in-migration has closely followed both the economic and the demographic cycles. Peak growth occurred during 1984-86 (see Table 3), due to a combination of temporary factors: a pent-up demand to move, created by the twin 1980 and 1981-82 recessions; a peak in the number of young adults nationwide; economic slumps in resource-dependent states, such as Texas, that "compete" with Arizona for migrants; and the unprecedented construction boom in the Phoenix area, which boosted job creation.

The short-term migration cycle became apparent during 1987, following a slowdown in the Phoenix area economy in late 1986 and 1987 that resulted in little new job creation. Calendar year net in-migration fell more than one-half even though no recession developed; from a peak of 19,000 per quarter in mid-1985, net in-migration dropped to 4,000 in fourth quarter 1987.

Pima County
(Metropolitan Tucson)

Net migration to the Tucson area has been much more erratic than to the Phoenix area but generally has followed the demographic and economic cycles. The Tucson area has grown much more slowly than the Phoenix area during the 1980s, receiving less than 15 percent of the state's net in-migration.

From the demographic cycle's trough in the mid-1960s, when the Tucson area suffered slight net out-migration, growth exploded in the early 1970s. Since then, such rapid gains have not been repeated.

Individual events have a greater impact in the Tucson area because of its smaller size (one-third the population of the Phoenix area), which partially explains the erratic nature of its growth. Thus, changes in fortunes of major companies, such as new plant openings or layoffs, may have noticeably affected overall migration figures. Further, Tucson dabbled in controlled growth in the mid-1970s and retains some of this reputation today.

Non-metropolitan Arizona

The rest of Arizona has grown more slowly than the urban areas since 1920, except for a brief period during the early 1970s. Though also relatively erratic, the growth pattern of non-metro Arizona has followed the two basic cycles.

During the 1960s, net in-migration to rural Arizona was practically nil. Growth surged during the early 1970s but has not since been duplicated. Though the flows and pattern closely resemble those of Pima County, the explanations differ.

The boom of the early 1970s was part of a national movement from urban to rural areas. That it did not last long was, in part, a result of poor economic opportunities in the rural areas.

Growth during the 1980s slowed even further as twin problems in

mining and agriculture caused severe economic decline in some parts of the state.

POPULATION PROJECTIONS

In making projections, a variety of factors must be examined.

Components of Population Growth

Net natural increase varies with birth rates. This figure has increased since the late 1970s because the children of the 1946-64 baby boom all are in child-bearing years. The trend of greater net natural increase should end shortly as the baby-bust generation ages into child-bearing years.

Gradually lower fertility has been the long-term pattern in this country, accelerated by the depression and second world war and offset in the period after the war. A change in the long-term pattern is unlikely; thus, nearly stable gains from net natural increase are likely into the next century.

Non-employment migration is little changed by economic conditions but greatly affected by an aging American population. The number of elderly increased some 30 percent between 1985 and 2000, making slow gains in retirement migration likely until after 2005, when the baby-boom generation will approach retirement age.

The base factor affecting employment migration is the number of young adults nationwide. This figure will fall by several million – about 14 percent – between 1985 and 2000. The result will be no further gains in employment-related migration by the end of the century.

Other Factors Affecting Employment Migration

A number of other factors could affect employment migration, but the likelihood of changes in each is relatively small:

(1) The "pulling" effect of Arizona. Migration to Arizona is heavily dependent on local economic conditions. The economic cycle will persist, and major changes to Arizona's economic structure or performance are unlikely. The "pulling" effect – from employment, climate and lifestyle – is not likely to change, except the short-term reduction during recessions.

(2) "Pushing" of people from Arizona. The growing problems of Arizona's urban areas – pollution, traffic congestion, generally uncontrolled growth – probably have not yet had much impact on out-migration. Such factors can have an impact, however, as seen in California. Lack of progress toward resolving these issues will cause out-migration to rise, but probably not within the next few years.

(3) The "pulling" effect of other Sunbelt states. Economic conditions in states like Texas have an effect on migration to and from Arizona. The boom-crash cycle of resource-dependent states is unlikely to repeat itself during the rest of this century.

(4) The "pushing" effect in northern states. Economic changes in states subject to net out-migration have an impact on population flows, but this pushing effect is secondary to the pull of other regions. The economic vitality of New England has reduced, but not eliminated, net out-migration. Some recovery in midwestern economic conditions is likely, but not to a level beyond that of the 1970s.

(5) Changes in local policies. Pro- or anti-growth policies affect migration flows, but Arizona's metro areas are not presumed to alter their current stances.

(6) Changes in mobility or migration patterns. The likelihood of fluctuations is near zero, given the stability of these patterns internationally and over time. Thus, conditions such as increasing mobility of the general population or greater movement of people from the Northeast to Arizona are highly unlikely.

Scenarios

Population projections are provided in Table 4 for each of four sets of assumptions. The "middle" scenario is the most likely. In general, it assumes the continuing dominance of the economic and demographic cycles. Little else is assumed to be different from average conditions that have prevailed in the past, es-

TABLE 3
POPULATION CHANGE
(In Thousands)

	Total Change				Net Migration			
	Ariz.	*Maricopa County*	*Pima County*	*Non-urban Ariz.*	*Ariz.*	*Maricopa County*	*Pima County*	*Non-urban Ariz.*
1961	86	62	12	12	59	49	7	3
1962	64	35	19	10	37	22	14	1
1963	50	33	9	8	25	21	4	0
1964	35	25	2	8	11	13	-2	0
1965	28	19	3	6	6	6	-1	-2
1966	30	18	5	7	10	8	2	0
1967	32	20	6	6	12	10	3	-1
1968	36	24	8	4	17	14	5	-3
1969	55	32	13	10	35	22	10	3
1970	58	34	12	12	35	22	8	5
1971	101	46	23	32	78	34	19	24
1972	112	61	27	24	90	50	23	17
1973	117	69	21	27	96	58	18	20
1974	99	61	16	22	76	50	12	14
1975	62	36	16	10	39	25	12	2
1976	60	26	11	23	37	15	7	15
1977	79	50	12	17	55	39	8	9
1978	90	58	14	18	66	46	10	10
1979	121	68	26	27	94	54	22	18
1980	99	66	12	21	70	51	7	12
1981	77	49	12	16	47	33	7	7
1982	71	41	14	15	40	25	9	6
1983	68	43	11	15	38	27	6	6
1984	110	76	15	19	79	59	10	10
1985	117	84	17	16	83	65	12	7
1986	126	88	17	21	91	68	12	12
1987	101	68	14	19	65	47	8	10
				Averages				
1961-70	47	30	9	8	24	19	5	0
1971-80	94	54	18	22	70	42	14	14
1981-87	96	64	14	17	64	46	9	8

Source: Center for Business Research, College of Business, Arizona State University (1980-date) and U.S. Bureau of the Census (1960-79).

TABLE 4
POPULATION PROJECTIONS BY DECADE, FOUR SCENARIOS
(In Thousands)

	1980	1990				2000				2010			
	Census	*Low*	*Middle*	*High*	*High2*	*Low*	*Middle*	*High*	*High2*	*Low*	*Middle*	*High*	*High2*
Total Population													
Maricopa Co.	1,509	2,115	2,115	2,180	2,260	2,755	2,865	2,945	3,250	3,405	3,620	3,770	4,050
Pima Co.	531	670	680	700	735	805	835	930	975	950	1,010	1,180	1,260
Non-urban Ariz. ...	677	850	855	860	885	1,020	1,050	1,090	1,095	1,190	1,265	1,385	1,360
Arizona	2,717	3,635	3,690	3,740	3,880	4,580	4,750	4,965	5,320	5,545	5,895	6,335	6,670
Ten-Year Population Change													
Maricopa Co.	538	606	646	671	751	640	710	765	990	650	755	825	800
Pima Co.	180	139	149	169	204	135	155	230	240	145	175	250	285
Non-urban Ariz. ...	223	173	178	183	208	170	195	230	210	170	215	295	265
Arizona	941	918	973	1,023	1,163	945	1,060	1,225	1,440	965	1,145	1,370	1,350

Source: Center for Business Research, College of Business, Arizona State University. 1980 Census data are from the U.S. Bureau of the Census. The 'High2' scenario is from the Arizona Department of Economic Security.

pecially since 1970. For example, neither a boom nor a bust is assumed in economic conditions of other southwestern or western states, meaning some improvement from the conditions of the last few years. In sum, Arizona may expect slightly greater net natural increase and retirement migration but nearly flat employment migration, which translates to modestly greater population gains than in the 1970s and 1980s.

Lesser population gains are projected in the "low" scenario from a combination of factors. The difference from the middle scenario is not very great, reflecting the low probability of many of the alternative factors. During the rest of the 1980s, the low scenario includes a recession that is not assumed in the middle scenario until at least 1990. The most likely projection for 1990 must be hedged between the low and middle series. After 1990, most of the difference from the middle scenario results from slightly lower birth rates and net migration, the latter a result of reduced quality of life pushing people from the urban areas. An economic depression or war probably would be the only events to cause much lesser population gains in Arizona.

The difference between the high scenario and the middle series is somewhat greater. Faster population growth could result from higher birth rates and increased net migration. The latter is based on two assumptions – that other western and southwestern states continue to experience significant economic difficulties and that local policies are both pro-growth and successful in stimulating economic development.

The "high2" scenario is presented because it is the state's latest (1986) "official" projection series. It is highly unrealistic, especially for Maricopa County. It does not allow for any economic cyclicality – every year is projected to have a population change near or exceeding the record historical number. Sharp increases in employment-related migration, especially in the early 1990s, are assumed, contrary to the near stability in migration expected from the demographic cycle. The only rationale provided is highway construction in the Phoenix area. This construction, already underway, will be spread over a long span of time. While it will have a positive impact, it will not attract tens of thousands of people annually. As noted above, the likelihood is nearly nil of other factors changing to allow nearly 400,000 additional people beyond the number projected in the middle scenario to move to the Phoenix area during the next 12 years.

Much more rapid growth is forecast by the official series than by the U.S. Bureau of the Census. New projections just released by the Census Bureau show less growth, particularly after 1995, than in the Center's projections.

Maricopa County

In all scenarios, the Phoenix area will continue to grow rapidly. Only in the high scenario after the year 2000 will its growth not continue to be the fastest in the state.

In the middle scenario, net natural increase should rise slightly from the current level of about 22,000 people per year. Non-employment migration will gradually grow from the current figure of about 8,000 annually, but employment migration will barely rise from an average value near 37,000 people per year. In net, slightly more people will be added to the population in each of the next two decades.

Since the Phoenix area's growth has conformed to the economic and demographic cycles so well, the high and low scenarios are not much different from the middle series. Only a depression, war or the unlikely swing from pro-growth to anti-growth attitudes would cause a lower population than in the low scenario.

Pima County

Since the Tucson area's historical growth has been uneven, the reliability of any projection is lower. As such, the relative spread between

Complete Report Available

This article is only a portion of a comprehensive report on Arizona's population and migration. The report was compiled from this article and previous *Arizona Business* articles on the state's demographics. It includes demographics of the resident population and of migrants, historical growth, population estimates and projections, geographic patterns of migration, the relationship of population growth to economic growth, and special topics, such as seasonal migration. Copies of the report are available from the Center for Business Research, College of Business, Arizona State University, Tempe, AZ 85287; (602) 965-3961.

the low and high series is greater than in the Phoenix area.

The middle scenario is based on growth since the mid-1970s. However, given that this growth was relatively slow, employment-related migration is allowed to rise slightly more rapidly than otherwise expected. Future population changes should be greater than in the 1980s but less than in the early 1970s.

The low series is barely lower than the middle series. Relative to the Phoenix area, the middle series already represents slow growth. Further, quality of life deterioration (real or perceived) is not likely to occur in Tucson to the extent that it would impact net migration.

The high series assumes much more rapid growth, along the lines of growth during the early 1970s. Local policies and developments could have a noticeable impact in Pima County. For example, a planned community, one with a large retirement component, could result in higher population figures, especially in the next century. The high series still is below the "high2" series, but the difference is not nearly as great as in Maricopa County.

Rural Arizona

The rest of the state as a whole is expected to continue to lag the urban areas in growth. In the most likely scenario, growth will be more rapid than in the early 1980s, when many areas were hard hit by mining and/or agricultural problems, but less than in the early 1970s, which largely was an aberrant demographic phenomenon.

As in Pima County, the low series is not much different from the middle series. The likelihood of the rural area doing worse than in the recent past is slim. The high series assumes much more rapid growth, particularly after the end of the century. In contrast to the comparison in the urban areas, the high series for rural Arizona is roughly comparable to the "high2" series of projections after 1990.

CONCLUSION

The point has been made that in the past Arizona's population growth always was underprojected, resulting in the state's infrastructure and services not keeping pace with growth. Unfortunately, serious problems also result from overprojections of growth. The current public-sector fiscal situation – budget deficits at both state and local levels – illustrates that high population projections lead to high revenue and expenditure projections, which may lead to deficits when the revenues do not materialize. Further, the risk of overprojecting growth is considerable to much of the private sector. Firms expecting constant, rapid growth may easily become over-extended, such as through premature expansion.

– Tom R. Rex
Research Manager

Valley Inflation Shows No Sign of Acceleration in First Quarter

Moderate inflation in the Phoenix metropolitan area continued during first quarter 1988; the seasonally adjusted increase of 0.8 percent was comparable to the gains of the three prior quarters (see Table 1). Before seasonal adjustment, the Metropolitan Phoenix Consumer Price Index rose 0.7 percent to 117.4 (1982-84 = 100), only 3.1 percent higher than in first quarter 1987.

COMPONENT INDEXES

Both locally and nationally, inflation has not begun to accelerate as predicted by many analysts. Although another decrease in gasoline prices helped to hold down the inflation rate in the first quarter, moderate-to-small increases in each major category of the Phoenix CPI ensured another mild overall advance.

Food and Beverages

Revisions made to the CPI in 1987 incorporated an updated set of relative importance weights. The differences between the old and new weights reveal changing consumption patterns of the American public since the early 1970s. In particular, the relative importance of the food-at-home category declined, while that of the food-away-from-home category increased. Thus, even though food-at-home prices climbed a steep 1.8 percent during first quarter 1988, a decrease in food-away-from-home prices – the fourth in the last six quarters – kept the overall food and beverages advance to 0.9 percent.

Housing

After a jump in fourth quarter 1987, housing inflation moderated to 1.0 percent during the first quarter. Renters' costs again increased (see Table 2) after a string of decreases, though apartment rents barely changed. Homeowners' costs again rose moderately. Fuel and other utility costs dipped, but the index for household furnishings and operations climbed by the largest amount in two years.

Transportation

Most transportation categories recorded declines during the first quarter. Gasoline prices fell 6.4 percent but were largely offset by relatively high inflation in automobile prices. Auto maintenance and repair costs also rose.

Medical Care

The deceleration of medical care inflation continued in the first quarter. After years of high inflation (double-digit rates in six of seven years between 1979 and 1985), health care inflation began to lessen in late 1985. By 1987, the annual average gain was nearly as low as the all-items rate. A slight, 0.3-percent boost during first quarter 1988 lowered the annual rate to only 1.1 percent.

For the second quarter in a row, the indexes for professional services and non-prescription drugs and medical supplies declined. Prescription drug prices also were lower, the first drop since seasonal adjustment began in 1984. In contrast, hospital costs advanced 3.1 percent, bringing the gain in the four quarters ended first quarter 1988 to 10.7 percent.

If last year's relative weights still were used, the index for the entire

medical care category would have dipped. The new relative weights give much more importance to hospital costs and much less to health insurance payments, which decreased slightly.

Other Categories

Inflation in the apparel and upkeep category continued at a relatively high rate. The other goods and services index also rose substantially, but inflation in the entertainment category moderated.

COMPARISON AREAS

Phoenix area inflation in the first quarter was nearly equivalent to the national rate (see Table 3). Local rates were higher for apparel and upkeep but lower for medical care.

During the four quarters ending first quarter 1988, inflation in the Phoenix area was less than the national average. In the transportation category, annual inflation slowed from 10 percent at the end of 1987, above the national average, to less than 2 percent, below the national average. Inflation also was lower for medical care, but higher for apparel and upkeep, than the U.S. rate.

OUTLOOK

Because inflation during the first quarter was somewhat less than expected, the forecast of 1988 rates, made at the end of 1987, was too high. The most likely scenario assumes an acceleration in the seasonally adjusted rates to approximately 1.3 percent per quarter from the roughly 0.9 percent that prevailed between second quarter 1987 and first quarter 1988. The result is an annual average rate near 3.5 percent with a year-over-year rate at the end of 1988 of slightly more than 4 percent.

Should inflation not accelerate, the annual average rate would barely exceed 3 percent with a year-end rate of only 3.5 percent. Even if inflation were to surge as it did in first quarter 1987, when gasoline prices soared, the 1988 annual average increase would hardly exceed last year's 4.1 percent.

– **Tom R. Rex**
Research Manager

TABLE 1
PERCENT CHANGES IN
METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter				
Expenditure Category	*Relative Importance*	*1st 1987*	*2nd 1987*	*3rd 1987*	*4th 1987*	*1st 1988*
ALL ITEMS	100.0	2.1	1.1	0.7	0.9	0.8
Food and Beverages	16.4	–0.2	0.5	0.9	0.6	0.9
Housing	42.4	0.5	0.2	0.5	2.3	1.0
Apparel and Upkeep	5.8	–2.5	2.8	2.7	0.9	2.3
Transportation	19.1	8.1	3.0	0.9	-2.0	–0.5
Medical Care	6.7	1.8	2.7	–2.1	0.9	0.3
Entertainment	4.6	2.4	–1.2	2.0	3.1	1.2
Other Goods and Services	5.0	2.0	0.3	2.9	0.6	2.2

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
First Quarter 1988

	Index (1982-84 = 100)		Percent Change from	
Expenditure Category	*Last Quarter*	*This Quarter*	*Last Quarter **	*Year-Ago Quarter*
ALL ITEMS	116.6	117.4	0.8	3.1
Food and Beverages	115.0	116.6	0.9	2.3
Food	114.6	115.5	0.3	1.7
Food at Home	114.4	117.4	1.8	3.6
Cereal and Bakery Products	126.9	132.5	3.3	7.0
Meats, Poultry, Fish, and Eggs	109.3	108.9	–0.9	2.4
Dairy Products	112.5	113.1	–0.6	2.2
Fruits and Vegetables	117.7	126.9	5.8	11.2
Other Food at Home	112.0	115.2	2.9	–0.8
Food Away from Home	115.0	114.0	–1.3	–0.2
Housing	113.1	113.8	1.0	3.6
Shelter	114.4	115.8	1.4	3.5
Renters' Costs**	119.1	119.6	1.0	1.3
Homeowners' Costs**	116.3	118.0	1.5	3.9
Fuel and Other Utilities	112.6	108.0	–1.4	4.2
Gas (piped) and Electricity	110.6	100.8	–4.0	2.7
Household Furnishings/Operations	109.3	113.0	2.4	3.9
Apparel and Upkeep	113.2	114.7	2.3	6.6
Transportation	113.8	113.7	–0.5	1.8
Private Transportation	113.9	114.4	–0.5	2.1
New and Used Cars	124.2	127.6	2.4	7.2
Motor Fuels	78.0	73.7	–6.4	–8.5
Public Transportation	109.6	106.3	–0.9	–0.1
Medical Care	141.2	142.2	0.3	1.1
Entertainment	136.6	138.9	1.2	5.6
Other Goods and Services	127.6	130.7	2.2	6.2

*Seasonally adjusted
**Base period is second quarter 1983.

TABLE 3
METROPOLITAN PHOENIX AND UNITED STATES
CONSUMER PRICE INDEXES
First Quarter 1988

	Percent Change from Last Quarter*		Percent Change from One Year Ago	
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*
ALL ITEMS	0.7	0.8	3.1	3.9
Food and Beverages	1.4	1.3	2.3	2.9
Housing	0.6	1.0	3.6	3.7
Apparel and Upkeep	1.3	–4.5	6.6	3.8
Transportation	–0.1	–1.0	1.8	3.6
Medical Care	0.7	2.0	1.1	6.4
Entertainment	1.7	0.9	5.6	4.2
Other Goods and Services	2.4	1.8	6.2	6.4

*Not seasonally adjusted

Source (Tables 1, 2 and 3): Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data in Table 3 are from the U.S. Department of Labor, Bureau of Labor Statistics.

Coincident Indexes Surge Statewide in January

Vigorous economic growth prevailed throughout Arizona in January. For the fifth time in six months, gains in non-metropolitan Arizona led the state (see Figure I).

The coincident economic index for non-urban Arizona jumped 1.5 percent, its largest advance since January 1986, to a record 133.0 (1982 = 100). In Maricopa County, the 1.1-percent increase was the greatest since August 1984, helping to offset weak growth in the last five months of 1987. The index reached a new high of 142.4. Economic growth in Pima County was not as spectacular, but the above-average gain of 0.7 percent pushed the index to a record 138.0.

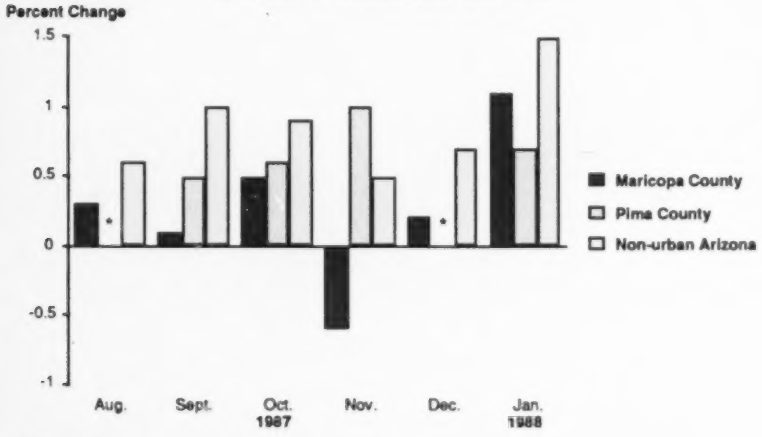
The index advances were led by employment gains and reductions in the unemployment rate. Employment rose strongly in the rural counties and moderately in the metropolitan areas. The unemployment rate fell sharply in Maricopa County and rural Arizona, by one of the largest amounts ever in each area. Pima County's rate decreased moderately.

In contrast, retail sales were flat in the Phoenix area and down slightly elsewhere. The valuation of commercial building permits declined in rural Arizona and in Maricopa County; the value in the Phoenix area was the lowest since the 1981-82 recession. Though commercial permit values were flat in the Tucson area, this level was the lowest since records began in 1974.

For the 12 months ending in January, the Maricopa County economy expanded at a slightly subpar rate, while economic growth elsewhere exceeded the state's long-term average of 5.7 percent.

The composite statewide measure rose 1.1 percent in January to a record 139.9.

FIGURE I
CHANGE IN COINCIDENT INDEXES



*No change

Source: Center for Business Research, College of Business, Arizona State University

– **Tom R. Rex**
Research Manager

March Purchasing Indicators Send Mixed Signals

The Arizona economy ended the first quarter at a new, high level, thanks to strong March increases in new orders received and production (see Table 1). Employment also again enjoyed consistent growth. Two negative signs clouded the picture: First, for the second consecutive month, purchased materials inventories experienced a large increase. If this trend continues, it could cause problems later. Second, the high price-increase rate foreshadows a growing inflation problem. The positive sign is that the monthly price-increase rate, although high, was the smallest of the past three months.

Arizona's good economic health should continue through the rest of the year. Consumer spending and rising exports will further strengthen the manufacturing sector, causing higher output and capital spending rates. The greatest concern is the persistent trend of price increases, which is likely to intensify as the economy moves to even higher levels over the balance of the year.

– **Harold Fearon**

TABLE 1
MARCH PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (March compared to February)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	49	47	4
Delivery time from vendors	34	57	9
Purchased materials inventory level	38	46	16
New orders received	42	38	20
Production	40	45	15
Employment	22	66	12
Purchases	47	30	23

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Leading Index Flat in February

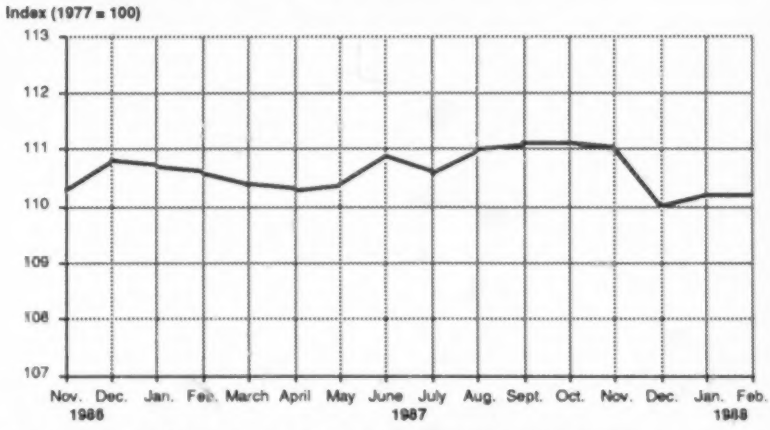
The Arizona Index of Leading Economic Indicators was unchanged in February, matching January's revised 110.2 (Figure I).

The index is based on 10 statistical economic indicators and is designed to predict economic activity up to six months in the future. Revisions were made this month to the money supply figures, sensitive prices, average hours worked, the price index used to adjust building permit values, and the factors used to seasonally adjust the data. These revisions have resulted in minor changes in prior index values.

Three of the five seasonally adjusted components derived from a survey of Arizona purchasing managers exerted a positive influence in February. Changes in supplier delivery times, inventory levels, and new orders helped to pull the index up, while employment and production pushed downward. Sensitive prices and unemployment claims also were negative influences.

The national money supply (M2) rose for the second month in a row, and the seasonally adjusted value of residential building permits also increased slightly.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution*			
	Nov.	*Dec.*	*Jan.*	*Feb.*
Delivery Time**	–.02	–.09	.09	.03
Inventory Levels**	.04	–.08	.04	.06
New Orders**	.04	–.11	–.05	.02
Production**	–.06	–.02	.02	–.08
Employment**	.00	.01	–.02	–.09
Residential Building Permits	.10	–.37	–.12	.01
Unemployment Insurance Claims	–.13	–.04	.13	–.23
Average Workweek, Manufacturing	.02	–.09	–.02	.00
Money Supply	–.06	–.02	.22	.26
Change in Sensitive Materials Prices	–.05	–.09	–.09	–.06
OVERALL INDEX CHANGE (%)	–.11	–.91	.20	–.07

* The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

**Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University

OUTLOOK

The recent performance of Arizona's leading index gives no indication that the pace of economic growth in 1988 will significantly exceed that recorded in 1987. Growth will be positive but unevenly distributed.

One sector with optimistic prospects is the tourism industry. Arizona restaurant and bar sales have been stronger than the sales of other retail components, which suggests visitor spending is having a positive impact. Vacation spending is supported by stable consumer confidence and low unemployment rates. Because of the falling dollar, many will choose domestic travel over more expensive foreign vacations.

The falling dollar was expected to help export-oriented industries compete in foreign markets. So far, agriculture has been the primary beneficiary. Arizona employment statistics have yet to provide tangible evidence of a gain in manufacturing jobs.

While Arizona manufacturing employment was flat last year, some Midwestern states that typically supply population flows to Arizona were adding to manufacturing payrolls. Illinois created more than 10,000 new manufacturing jobs during 1987, and Wisconsin added 15,000. Such figures very likely have played a role in slowing Arizona population growth. On the positive side, reduced rates of population growth tend to moderate increases in the unemployment rate.

Construction continues to be the weakest sector of the Arizona economy, with job losses anticipated for the rest of the year. Commercial building's outlook is affected by the sizable inventory on hand, and the favorable changes in population flows and interest rates necessary to jolt the residential market are not expected anytime soon.

In summary, an analysis of recent movements in the Arizona index of leading indicators and a review of current economic conditions lead to an outlook of relatively slow growth in the months ahead, with some strength in trade and services, sluggishness in manufacturing, and weakness in construction.

– **Tracy L. Clark,** *Economist*
Economic Outlook Center

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	3rd Qtr.	57.463	1.8	9.5	NA	NA
Arizona - 1982 Dollars	3rd Qtr.	48.334	0.9	5.4	NA	NA
COINCIDENT ECONOMIC INDEXES						
(1982 = 100)						
Arizona	Jan.	139.9	1.1	5.4	NA	NA
Metropolitan Phoenix	Jan.	142.4	1.1	5.2	NA	NA
Metropolitan Tucson	Jan.	138.0	0.7	5.8	NA	NA
Non-urban Arizona	Jan.	133.0	1.5	6.0	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	1st Qtr.	117.4	0.7	3.1	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Feb.	110.2	–0.1	–0.4	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	Feb.	216,326	18	–19	398,334	–30
Pima County	Feb.	28,879	9	–39	55,239	–34
Balance of State	Feb.	46,443	52	10	76,857	–8
Arizona	Feb.	291,648	22	–18	530,430	–28
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Feb.	1,203	0	–49	2,408	–52
Pima County	Feb.	446	89	–23	681	–44
Balance of State	Feb.	721	–8	–1	1,509	–7
Arizona	Feb.	2,370	6	–35	4,598	–42
HOME SALES						
Maricopa County - Number	March	3,240	–14	–43	10,410	–27
Maricopa County - Median Price	March	78,975	–1.3	1.9	80,000	2.4
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	4th Qtr.	87	–5.4	–12.1	NA	NA
Metropolitan Phoenix - Resale Homes	4th Qtr.	106	–2.8	–7.8	NA	NA
MORTGAGE INTEREST RATES						
(Conventional, 30-year, Fixed-rate)						
Maricopa County	March	9.9	0.0	11.2	NA	NA
POPULATION ESTIMATES						
(In Thousands)						
Maricopa County	4th Qtr.	1,993	0.5	2.7	NA	NA
Arizona	4th Qtr.	3,443	0.5	2.4	NA	NA
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	Feb.	2,898	–13.0	10.0	6,231	8.4

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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